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To: Examiner Yoon Young Kim

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Comments: Ex. Kim,

Please see the proposed Amendments and accompanying Remarks in preparation for our June 6, 2006 interview for these cases. Thanks-Paul Ulrich

If there are any problems in receiving this transmission, please call the fax room at (937) 449-6400 immediately. Thank you.

Patent
8681RCR

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of

Applicant	:	Mitchell et al.
Serial No.	:	10/705,572
Filed	:	November 11, 2003
Title	:	Water Filter Materials, Water Filters And Kits Containing Silver Coated Particles And Processes For Using The Same
Docket No.	:	8681RCR
Examiner	:	Yoon Young Kim
Art Unit	:	1723
Conf. No.	:	4234

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office ((571) 273-8300) on _____, 2006.

Paul M. Ulrich — 46,404 Reg. No.

PROPOSED AMENDMENT AND RESPONSE UNDER 37 CFR §1.111

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This paper is being filed in response to the Office Action of January 31, 2006. Reconsideration of the present application is respectfully requested in light of the amendments and remarks below.

Amendments to the Claims are set forth in the Listing of the Claims which begin on page 2 of this paper.

Remarks begin on page 6 of this paper.

9116.813

Serial No. 10/705,572
Response date April #####, 2006
Reply to Office Action of January 31, 2006

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of the Claims

1. (Currently Amended) A kit comprising:

i) a filter for providing potable water, comprising:

(a) a housing having an inlet and an outlet; and

(b) a filter material disposed within said housing formed at least in part from a plurality of mesoporous activated carbon filter particles, wherein a portion of said plurality of mesoporous activated carbon filter particles is at least partially coated with a material comprising silver; and

ii) a package for containing the filter; and

wherein either the package or the filter housing comprises information that the filter or filter material provides: bacterial removal; virus removal; microbial removal; killing of bacteria, killing of viruses, killing of microbials, or any combination of these;

wherein said filter has a Filter Bacteria Log Removal of greater than about 2 logs, and a Filter Viruses Log Removal of greater than about 1 log.

2. (Original) The kit of claim 1, wherein the sum of the mesopore and the macropore volumes of said plurality of mesoporous activated carbon filter particles is between about 0.2 mL/g and about 2 mL/g.

3. (Currently Amended) The kit of claim 1, wherein said plurality of mesoporous activated carbon filter particles has a ~~BRI~~ Bacteria Removal Index of greater than about 99%, and a ~~VRI~~ Viruses Removal Index of greater than about 90%.

Claim 4 (Canceled).

5. (Original) The kit of claim 1, wherein said filter material has a single-collector efficiency, η, of between about 0.005 and 0.25, and a filter coefficient, λ, between about 40 m^{-1} and about 14,000 m^{-1}.

6. (Currently Amended) The kit of claim 1, wherein said plurality of mesoporous activated carbon filter particles are basic and have a point of zero charge between about 9 and about 12, an ~~ORP~~ Oxygen Reduction Potential between about 290 mV and about 175 mV.

7. (Currently Amended) A filter for providing potable water, comprising:

(a) a housing having an inlet and an outlet; and

(b) a filter material disposed within said housing formed at least in part from a plurality of mesoporous activated carbon filter particles ~~and particles selected from the group consisting of mesoporous activated carbon filter particles coated entirely with silver or a silver containing material, mesoporous activated carbon filter particles partially coated with silver or a silver containing material, silver particles and mixtures thereof~~, wherein at least a portion of said mesoporous activated carbon filter particles comprises silver directly coated thereon;

wherein said mesoporous activated carbon particles have a sum of mesopore and macropore volumes of greater than 0.4 mL/g;

~~(c)~~ wherein said filter ~~material~~ has a ~~F-BLR~~ Filter Bacteria Log Removal of greater than about 2 logs, and a ~~F-VLR~~ Filter Viruses Log Removal of greater than about 1 log.

8. (Original) The filter of claim 7, wherein the sum of the mesopore and the macropore volumes of said plurality of mesoporous activated carbon filter particles is between about 0.2 mL/g and about 2 mL/g.

9. (Currently Amended) The filter of claim 7, wherein said plurality of mesoporous activated carbon filter particles has a ~~BRI~~ Bacteria Removal Index of greater than about 99%, and a ~~VRI~~ Viruses Removal Index of greater than about 90%.

Claim 10. (Canceled)

11. (Original) The filter of claim 7, wherein said filter material has a single-collector efficiency, η, of between about 0.005 and 0.25, and a filter coefficient, λ, between about 40 m^{-1} and about 14,000 m^{-1}.

12. (Currently Amended) The filter of claim 7, wherein said plurality of mesoporous activated carbon filter particles are basic and have a point of zero charge between about 9 and about 12, an ~~ORP~~ Oxygen Reduction Potential between about 290 mV and about 175 mV.

13. (Currently Amended) A filter for providing potable water, comprising:

(a) a housing having an inlet and an outlet; and

(b) a filter material disposed within said housing formed at least in part from a plurality of mesoporous activated carbon filter particles and other materials selected from the group consisting of activated carbon powders, activated carbon granules, activated carbon fibers, zeolites, activated alumina, activated magnesia, diatomaceous earth, activated silica, hydrotalcites, glass, polyethylene fibers, polypropylene fibers, ethylene maleic anhydride copolymers fibers, sand, clay and mixtures thereof, wherein at least a portion of the other materials are coated with silver or a silver containing material;

~~(c)~~ wherein said filter ~~material~~ has ~~a F BLR~~ Filter Bacteria Log Removal of greater than about 2 logs, and ~~a F VLR~~ Filter Viruses Log Removal of greater than about 1 log.

14. (Original) A kit comprising:

i) a filter according to claim 7; and

ii) a package for containing the filter; and wherein either the package or the filter housing comprises information that the filter or filter material provides: bacterial removal; virus removal; microbial removal; killing of bacteria, killing of viruses, killing of microbials, or any combination of these.

15. (Original) A kit comprising:

i) a filter according to claim 13; and

ii) a package for containing the filter; and wherein either the package or the filter housing comprises information that the filter or filter material provides: bacterial removal; virus removal; microbial removal; killing of bacteria, killing of viruses, killing of microbials, or any combination of these.

16. (Previously Presented) A process for providing potable water, comprising passing contaminated water through the filter of claim 1 to provide potable water.

17. (Previously Presented) A process for providing potable water, comprising passing contaminated water through the filter of claim 7 to provide potable water.

18. (Previously Presented) A process for providing potable water, comprising passing contaminated water through the filter of claim 13 to provide potable water.

REMARKS

Status of claims

Applicants thank the Examiner for the consideration given to the present application. Claim 4 has been canceled without prejudice. Claims 1, 3, 6, 7, 9, 12, and 13 have been amended to correct several informalities. Support for the amendment is found in the specification and figures, and thus no new matter has been entered in the claims. Claims 1-3, 5-9, and 11-18 are pending in the present application.

Objection to the Claims

Claims 3-4, 6-7, 9, 12, and 13 are objected to because of the following informalities: abbreviations BRI, VRI, F-VLR, F-BLR, and ORP should be fully written out. Accordingly, claims 3, 6-7, 9, 12, and 13 have been amended to correct these informalities, and claim 4 has been canceled without prejudice. Thus, Applicants respectfully request the objection to these claims be withdrawn.

Rejection of The Claims under 35 U.S.C. §102 and §103

Claims 7, 13, and 17-18 have been rejected under 35 U.S.C. §102(b) as being anticipated by Koslow, U.S. Patent No. 6,630,016. Claims 1, 3-4, and 16 have been rejected under 35 U.S.C. §102(e) as being anticipated by Jagtoyen et al., Pub. No. US 2004/0040906. Claim 2 has been rejected under 35 U.S.C. §103(a) as being obvious over Jagtoyen as applied to Claim 1, and further in view of Chesneau et al., Pub. No. US 2002/0172637. Claim 5 has been rejected under 35 U.S.C. §103(a) as being obvious over Jagtoyen as applied to Claim 1, and further in view of Judd et al., U.S. Patent No. 5,376,279. Claim 6 has been rejected under 35 U.S.C. §103(a) as being obvious over Jagtoyen as applied to Claim 1, and further in view of Koslow and Denkewicz, Jr. et al., U.S. Patent No. 5,772,896. Claim 8 has been rejected under 35 U.S.C. §103(a) as being obvious over Koslow as applied to Claim 7, and further in view of Chesneau. Claims 9 and 14-15 have been rejected under 35 U.S.C. §103(a) as being obvious over Koslow as applied to Claims 7 and 13, and further in view of Jagtoyen. Claim 11 has been rejected under 35 U.S.C. §103(a) as being obvious over Koslow as applied to Claim 7, and further in view of

Judd et al., U.S. Patent No. 5,376,279. Claim 12 has been rejected under 35 U.S.C. §103(a) as being obvious over Koslow as applied to Claim 7, and further in view of Denkewicz, Jr. et al.

Applicants respectfully traverse the rejection of the claims and submit that none of the references, singularly or in combination, teach or suggest a filter formed from **mesoporous** activated carbon filter particles (defined as activated carbon particles with a sum of mesopore and macropore volumes of greater than 0.12 mL/g), wherein a portion of the mesoporous particles is partially coated with silver, and wherein the filter has a **Filter Bacteria Log Removal** (F-BLR) of greater than about **2 logs**, and a **Filter Viruses Log Removal** (F-VLR) of greater than about **1 log**. Under 35 USC §102, a single prior art reference must, either expressly or inherently, teach each and every element of the claims. MPEP 2131. Moreover, in order to establish a prima facie case of obviousness under §103, the Examiner has the burden of showing, by reasoning or evidence, that: 1) there is some suggestion or motivation, either in the references themselves or in the knowledge available in the art, to modify that reference's teachings; 2) there is a reasonable expectation on the part of one of ordinary skill in the art that the modification or combination has a reasonable expectation of success; and 3) the prior art references (or references when combined) teach or suggest all the claim limitations. MPEP §2145.

Applicants' independent claims 1, 7, and 13 recite a filter comprising, *inter alia*, a filter material formed at least in part from a plurality of **mesoporous activated carbon filter particles**, wherein a portion of the mesoporous carbon filter **particles** is **coated with silver**, wherein the **filter** has a **Filter Bacteria Log Removal** (F-BLR) of greater than about **2 logs**, and a **Filter Viruses Log Removal** (F-VLR) of greater than about **1 log**. Applicants' specification defines "mesoporous activated carbon filter particles" as activated carbon filter particles wherein the sum of the mesopore and macropore volumes may be greater than 0.12 mL/g, and "microporous activated carbon filter particles" as activated carbon filter particles wherein the sum of the mesopore and macropore volumes may be less than 0.12 mL/g. In addition, Applicants' specification further defines "mesopore" as an intra-particle pore having a width or diameter between 2 nm and 50 nm, and "macropore" as an intra-particle pore having a width or diameter greater than 50 nm.

The Examiner alleges that Koslow teaches a filter material formed in at least in part from a plurality of mesoporous activated carbon filter particles. (col. 2, lines 1-14), wherein the

mesoporous activated carbon particles are coated with silver (col. 7, lines 22-11). However, in column 2, lines 1-14, Koslow teaches providing active particles having an average particle size of about 0.1 microns to about 5,000 microns and forming the treated active particles into a **microporous** structure having a mean flow path of less than about 2 microns. (col. 2, lines 1-14; see the Title). Applicants submit that the claim term "mesoporous activated carbon particles" has a clearly defined meaning of activated carbon particles with a **sum of mesopore and macropore volumes of greater than 0.12 mL/g**. Koslow's teaching of the average **particle size** refers to the particle size itself and not the claimed **intra-particle mesoporous pore volume** as recited in claims 1, 7, and 13. In fact, as acknowledged by the Examiner, Koslow does not disclose the mesoporous or macroporous pore volumes. (Office Action, par. 9). As such, Koslow cannot teach or suggest Applicants' claimed mesoporous activated carbon particles, which are defined as having a sum of mesopore and macropore volume of greater than 0.12 mL/g.

In addition, Applicants respectfully submit that Koslow teaches filter particles comprising a microbiological interception enhancing agent comprising a cationic material that is first coated onto the activated carbon particles and then a biologically active metal (e.g., silver) is precipitated onto the cationic material (col. 1, lines 52-60). In contrast, Applicants' invention requires no intermediate cationic polymer because Applicants' invention coats the silver directly onto the mesoporous activated carbon particles. Thus, Applicants' filter is able to remove bacteria and viruses without the cationic material required and taught by Koslow. Therefore, Applicants respectfully submit that Koslow does not teach or suggest, explicitly or inherently, a filter formed from **mesoporous** activated carbon filter particles (as defined), mesoporous activated carbon particles partially coated with silver, or a mesoporous activated carbon filter that has a **Filter Bacteria Log Removal** (F-BLR) of greater than about **2 logs**, and a **Filter Viruses Log Removal** (F-VLR) of greater than about **1 log** as recited by Applicants' independent claims 1, 7, and 13.

In order to overcome the lack of teaching in Koslow regarding mesoporous and macroporous volumes, the Examiner alleges Chesneau et al. teach a filter, wherein the sum of the mesopore and macropore volumes is between about 0.2 mL/g and 2 mL/g. (par. 35). However, the Applicants respectfully submit that although Chesneau et al. teach a mesopore volume of at least 0.3 mL/g, Chesneau et al. is silent as to whether macropores are even present within their

filter material. Also, Chesneau et al. do not teach or even suggest using mesoporous activated carbon particles to form a filter that is configured to remove bacteria or viruses, let alone at the claimed F-BLR and an F-VLR levels. Actually, Chesneau et al. teach away from Applicants' invention as they teach bacteria attach only to macropores, and not to mesopores. (par. 4).

Rather, Applicants submit that Chesneau et al. teach an activated carbon filter that operates in a biological mode. A biological mode filter is a filter wherein the carbon material acts as a support for bacteria that can decompose biodegradable organic matter in the water to be treated. (par. 4). Nowhere does Chesneau et al. teach or suggest that their filter is configured to remove bacteria or viruses (or is even capable of removing), particularly at the claimed F-BLR and F-VLR levels. Chesneau et al. disclose that the "attachment of the bacteria to the carbon-containing material and their growth thereon are made possible by providing suitable macropores. (Id.). Chesneau et al. also discloses that the presence of micropores and mesopores also allows the filter to operate conventionally to absorb organic and inorganic pollutants such as detergents, pesticides, herbicides, trace metals, polycyclic aromatic hydrocarbons, organic compounds of low solubility, chlorinated derivatives, colored or odorous entities, humic acids, and the like. (par. 4 - par. 5). As clearly shown, Chesneau et al., singularly or in combination with Koslow, do not teach or suggest a filter formed from mesoporous activated carbon filter particles (as defined), wherein the filter formed from such particles has an F-BLR of greater than 2 logs or F-VLR of greater than 1 log as recited by claims 1, 7, and 13. In addition, Chesneau et al. is completely silent as to coating mesoporous activated carbons with silver.

The Examiner also alleges that Jagtoyen et al. teach a filter material formed in at least in part from a plurality of mesoporous activated carbon filter particles, wherein the filter material has an F-BLR of greater than about 2 logs and an F-VLR of greater than about 1 log. However, Applicants respectfully submit that the Examiner has misunderstood the teachings of Jagtoyen et al. (par. 96, Tables 6-7, and Table 2-3). In paragraph 96, Jagtoyen et al. teach a composite fiber having a micropore volume of 0.37 - 0.51 cc/g, no macropores, and low mesopore volume. (para. 96, Jagtoyen et al.). Applicants submit that the activated carbon particles having a low mesopore volume and zero macropore volume taught by Jagtoyen et al. are considered **microporous** activated carbon particles, **not mesoporous** activated carbon particles as claimed in Applicants' claims and defined within the specification.

In support of this, Applicants point to their specification that defines "microporous activated carbon filter particles" as activated carbon filter particles having a sum of mesopore and macropore volumes of **less than 0.12 mL/g**, and "mesoporous activated carbon filter particles as activated carbon filter particles" having a sum of mesopore and macropore volumes of **greater than 0.12 mL/g**. (p. 9, lines 20-23 and lines 17-19, respectively). Applicants further submit that it is generally accepted that **microporous** activated carbon filter particles include **low mesopore volumes**, generally **less than 0.1 mL/g** such as the coconut carbon shown in Applicants' Figures 7a and 7b. This coconut carbon filter material comprises microporous activated carbon filter particles having, for example, mesopore volumes of less than 0.09 mL/g. Thus, Jagtoyen et al's low mesopore (i.e., less than 0.1 mL/g) and zero macropore (i.e. 0 mL/g) activated carbon particles would teach a sum of mesopore and macropore volumes of less than 0.1 mL/g (0.1 mL/g + 0 mL/g), which **definitely does not teach or suggest** Applicants' **mesoporous activated carbon particles** as defined and claimed.

Moreover, since Jagtoyen et al. do not teach or suggest mesoporous activated carbon particles, then Jagtoyen et al. definitely do not teach or suggest mesoporous activated carbon particles coated with silver or a filter that is formed from mesoporous activated carbon particles and that has a **Filter Bacteria Log Removal** of greater than about **2 logs**, and a **Filter Viruses Log Removal** of greater than about **1 log** as claimed by Applicants. First, Jagtoyen et al. is void of any teaching regarding coating mesoporous activated carbon particles with silver. Second, in teaching the use of a low mesopore and no macropore activated carbon particles (i.e., microporous activated carbon particles) to form a filter material to remove microorganisms from water, Applicants submit that Jagtoyen et al. teach away from forming a filter using mesoporous activated carbon particles in order to remove bacteria and viruses from water, let alone a filter configured to have an F-BLR and F-VLR values as claimed by Applicants.

Third, Applicants' claimed F-BLR of greater than 2 logs and F-VLR of greater than 1 log refer to the filter's bacteria and virus removal capability after the flow of the first 2,000 filter material pore volumes. Jagtoyen et al.'s Tables 1-3 and 6-7 do not teach or suggest such F-BLR and F-VLR values after the first 2,000 filter material pore volumes. Jagtoyen et al.'s Table 2 teaches bacteria log removal values at a maximum flow rate of 10 columns/hour, which equates to approximately 4.3 filter material pore volumes per hour (using a typical filter bed porosity of

0.43), and for a maximum time period of 28.9 hours. To compare this to Applicants' claimed 2,000 filter material pore volumes the 4.3 filter material pores volumes per hour must be multiplied by the 28.9 hours to arrive at the value of 124 filter material pore volumes. Jagtoyen et al.'s Table 3 teaches bacteria log removal values at a maximum flow rate of 10 columns/hour, which equates to approximately 4.3 filter material pore volumes per hour, and for a maximum time period of 20 minutes. To compare this to Applicants' claimed 2,000 filter material pore volumes the 4.3 filter material pores volumes per hour must be multiplied by the .333 hours (20 minutes converted to hours) to arrive at the value of 1.4 filter material pore volumes. Thus, Jagtoyen et al.'s Tables 2 and 3 only teach a filter that has a bacteria log removal for a maximum of 124 and 1.4 filter material pore volumes, respectively, versus Applicants' claimed F-BLR and F-VLR after the first 2,000 material pore volumes, which is significantly different.

Jagtoyen et al.'s Table 6 teaches bacteria log removal values at a maximum flow rate of 8.8 columns/hour, which equates to approximately 3.78 filter material pore volumes per hour, and for a maximum time period of 6 hours. To compare this to Applicants' claimed 2,000 filter material pore volumes the 3.78 filter material pores volumes per hour must be multiplied by the 6 hours to arrive at the value of 22.7 filter material pore volumes. Jagtoyen et al.'s Table 7 teaches bacteria log removal values at a maximum flow rate of 67 columns/hour, which equates to approximately 28.8 filter material pore volumes per hour, and for a maximum time period of 9.5 minutes. To compare this to Applicants' claimed 2,000 filter material pore volumes the 28.8 filter material pores volumes per hour must be multiplied by the .16 hours (9.5 minutes converted to hours) to arrive at the value of 4.56 filter material pore volumes. Thus, Jagtoyen et al.'s Tables 6 and 7 only teach a filter that has a bacteria log removal for a maximum of 22.7 and 4.56 filter material pore volumes, respectively, versus Applicants' claimed F-BLR and F-VLR after the first 2,000 filter material pore volumes, which is again significantly different.

Thus, Applicants submit that Jagtoyen et al. would provide no motivation or suggestion to combine, and actually teaches away from combining, Jagtoyen et al. with Chesneau et al. or Koslow. Accordingly, Applicants submit that Jagtoyen et al., singularly or in combination with Koslow and/or Chesneau et al., do not teach or suggest a filter formed from **mesoporous** activated carbon filter particles (as defined), mesoporous activated carbon particles partially **coated with silver**, or a mesoporous activated carbon filter that has a **Filter Bacteria Log**

Removal (F-BLR) of greater than about **2 logs**, and a **Filter Viruses Log Removal** (F-VLR) of greater than about **1 log** as recited by Applicants' independent claims 1, 7, and 13.

Applicants further submit that none of the remaining applied references (Judd et al. or Denkewicz, Jr. et al.) singularly or in combination with Koslow, Chesneau et al, and/or Jagtoyen et al. teach or suggest a filter material formed in part from mesoporous activated carbon, wherein a portion of the mesoporous activated carbon is coated with silver, and wherein a filter made from the filter material has an F-BLR of greater than 2 logs and F-VLR greater than 1 log. Both references are void of any teaching or suggestion to mesoporous activated carbon and F-BLR and F-VLR values, let alone a mesoporous activated carbon filter material having a portion of the mesoporous activated carbon coated with silver and forming a filter that has an F-BLR and an F-VLR as claimed in independent claims 1, 7, and 13.

Therefore, Applicants respectfully submit that none of the references, singularly or in combination, teach or suggest mesoporous activated carbon particles coated with silver or a **filter formed** from **mesoporous** activated carbon filter particles (defined as sum of mesopore and macropore volumes of greater than 0.12 mL/g), wherein a portion of the mesoporous particles is partially **coated with silver**, and wherein the filter has a **Filter Bacteria Log Removal** (F-BLR) of greater than about **2 logs**, and a **Filter Viruses Log Removal** (F-VLR) of greater than about **1 log**. Accordingly, Applicants respectfully request the rejections under 35 U.S.C. §102 and §103 of independent claims 1, 7, and 13 be withdrawn. As claims 2, 3, 5, 6, 8, 9, 11, 12, and 14-18 depend from claims 1, 7, or 13, Applicants request the rejections under 35 U.S.C. §102 and §103 of these claims be withdrawn as well.

CONCLUSION

Applicants respectfully submit that the present application is in condition for allowance. The Examiner is encouraged to contact the undersigned to resolve efficiently any formal matters or to discuss any aspects of the application or of this response. Otherwise, early notification of allowable subject matter is respectfully solicited.

Respectfully submitted,
DINSMORE & SHOHL L.L.P.

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PATENT SERIAL NO. 10/464,210
PROPOSED AMENDMENTS TO THE CLAIMS

Application of

Applicant	: Mitchell et al.
Serial No.	: 10/464,210
Filed	: June 18, 2003
Title	: Water Filter Materials And Water Filters And Processes For Using The Same
Docket No.	: 8681RC
Examiner	: Yoon Young Kim
Art Unit	: 1723
Conf. No.	: 1449

Listing of Claims

1. (Currently Amended) A filter for providing potable water, comprising:

(a) a housing having an inlet and an outlet; and

(b) a filter material disposed within said housing formed at least in part from a plurality of mesoporous activated carbon filter particles;

wherein said filter has a ~~F-BLR~~ Filter Bacteria Log Removal of greater than about 2 logs and a ~~F-VLR~~ Filter Viruses Log Removal of greater than about 1 log.

2. (Original) The filter of claim 1, wherein the sum of the mesopore and the macropore volumes of said plurality of mesoporous activated carbon filter particles is between about 0.2 mL/g and about 2 mL/g.

3. (Currently Amended) The filter of claim 1, wherein said plurality of mesoporous activated carbon filter particles has a ~~BRI~~ Bacteria Removal Index of greater than about 99%, and a ~~VRI~~ Viruses Removal Index of greater than about 90%.

4. (Canceled)

5. (Original) The filter of claim 1, wherein said filter material is disposed in said housing for axial flow, wherein said filter material has a face area of at least 1.5 $in.^2$ and a filter depth of at least 0.25 in.

6. (Original) The filter of claim 1, wherein said filter material is disposed in said housing for radial flow, wherein said filter material has an outside diameter of at least 0.5 in., an inside diameter of at least 0.25 in., a filter depth of at least 0.125 in., and a length of at least 0.5 in.

7. (Original) The filter of claim 1, wherein said filter material has a n average fluid residence time of at least 3 s.

8. (Original) The filter of claim 1, where said filter material has a single-collector efficiency, η, of between about 0.005 and 0.25, and a filter coefficient, λ, between about 40 m^{-1} and about 14,000 m^{-1}.

9. (Original) A filter for providing potable water, comprising:

(a) a housing having an inlet and an outlet; and

(b) a filter material disposed within said housing formed at least in part from a plurality of mesoporous and basic activated carbon filter particles.

10. (Currently Amended) The filter of claim 9, wherein said plurality of mesoporous and basic activated carbon filter particles has a point of zero charge between about 9 and about 12 and an ~~ORP~~ Oxygen Reduction Potential between about 290 mV and about 175 mV.

11. (Original) The filter of claim 9, wherein the sum of the mesopore and the macropore volumes of said plurality of mesoporous and basic activated carbon filter particles is between about 0.2 mL/g and about 2 mL/g.

12. (Currently Amended) The filter of claim 9, wherein said plurality of mesoporous and basic activated carbon filter particles has a ~~BRI~~ Bacteria Removal Index of greater than about 99.99%, and a ~~VRI~~ Viruses Removal Index of greater than about 99%.

13. (Currently Amended) The filter of claim 9, wherein said filter has a ~~F BLR~~ Filter Bacteria Log Removal of greater than about 2 logs and a ~~F VLR~~ Filter Viruses Log Removal of greater than about 1 log.

14. (Original) The filter of claim 9, wherein said filter material is disposed in said housing for axial flow, wherein said filter material has a face area of at least 1.5 $in.^2$ and a filter depth of at least 0.25 in.

15. (Original) The filter of claim 9, wherein said filter material is disposed in said housing for radial flow, wherein said filter material has an outside diameter of at least 0.5 in., an inside diameter of at least 0.25 in., a filter depth of at least 0.125 in., and a length of at least 0.5 in.

16. (Original) The filter of claim 9, wherein said filter material has an average fluid residence time of at least 3 s.

17. (Original) The filter of claim 9, wherein said filter material has a single-collector efficiency, η, of between about 0.005 and 0.25.

18. (Original) The filter of claim 9, wherein said filter material has a filter coefficient, λ, between about 40 m^{-1} and about 14,000 m^{-1}.

19. (Original) A filter for providing potable water, comprising:

(a) a housing having an inlet and an outlet; and

(b) a filter material disposed within said housing formed at least in part from a plurality of mesoporous, basic, and reduced-oxygen activated carbon filter particles.

20. (Currently Amended) The filter of claim 19, wherein said plurality of mesoporous, basic, and reduced-oxygen activated carbon filter particles has a point of zero charge of greater than about 8, and an ~~ORP~~ Oxygen Reduction Potential of less than about 325 mV.

21. (Original) The filter of claim 19, wherein the sum of the mesopore and macropore volumes of said plurality of mesoporous, basic, and reduced-oxygen activated carbon filter particles is greater than about 0.2 mL/g.

22. (Original) The filter of claim 19, wherein said plurality of mesoporous, basic, and reduced-oxygen activated carbon filter particles has a bulk oxygen percentage by weight of less than about 1.2%.

23. (Currently Amended) The filter of claim 19, wherein said plurality of mesoporous, basic, and reduced-oxygen activated carbon filter particles has a ~~BRI~~ Bacteria Removal Index of greater than about 99%, and a ~~VRI~~ Viruses Removal Index of greater than about 90%.

24. (Currently Amended) The filter of claim 19, wherein said filter has a ~~F-BLR~~ Filter Bacteria Log Removal of greater than about 2 logs and a ~~F-VLR~~ Filter Viruses Log Removal of greater than about 1 log.

25. (Original) The filter of claim 19, wherein said filter material is disposed in said housing for axial flow, wherein said filter material has a face area of at least 1.5 $in.^2$ and a filter depth of at least 0.25 in.

26. (Original) The filter of claim 19, wherein said filter material is disposed in said housing for radial flow, wherein said filter material has an outside diameter of at least 0.5 in., an inside diameter of at least 0.25 in., a filter depth of at least 0.125 in., and a length of at least 0.5 in.

27. (Original) The filter of claim 19, wherein said filter material has an average fluid residence time of at least 3 s.

28. (Original) The filter of claim 19, wherein said filter material has a single-collector efficiency, η, of greater than about 0.005.

29. (Original) The filter of claim 19, wherein said filter material has a filter coefficient, λ, of greater than about 40 m^{-1}.

30. (Currently Amended) A filter for providing potable water, comprising:

(a) a housing having an inlet and an outlet; and

(b) a filter material disposed within said housing formed at least in part from a plurality of mesoporous activated carbon filter particles, wherein said plurality of mesoporous activated carbon filter particles of said filter material does not include cationic polymer or silver and has a bulk oxygen percentage by weight of less than about 2.3%, a sum of the mesopore and macropore volumes of greater than about 0.61 mL/g, a point of zero charge of greater than about 8, an ~~ORP~~ Oxygen Reduction Potential of less than about 325 mV, a ~~VRI~~ Viruses Removal Index of greater than about 99.99%., and a ~~BRI~~ Bacteria Removal Index of greater than about 99.9%, and wherein said filter has a ~~F-VLR~~ Filter Viruses Log Removal of greater than about 4 logs, a ~~F-BLR~~ Filter Bacteria Log Removal of greater than about 6 logs, an average fluid residence time of greater than about 3 s, a filter depth of at least 0.5 in, and a face area of at least 10 $in.^2$.

31. (Original) The filter of claim 30, wherein said filter material has a single-collector efficiency, η, of greater than about 0.007.

32. (Original) The filter of claim 30, wherein said filter material has a filter coefficient, λ, of greater than about 65 m^{-1}.

33. (Original) The filter of claim 30, wherein said filter further comprises information which communicates to a user that the filter may be used to remove microorganisms.